Release Notes

Polycom® RealPresence® Desktop for Windows®, Version 2.3

Polycom is pleased to announce this release of the Polycom® RealPresence® Desktop for Windows application.

RealPresence Desktop is a standards-based application that enables you to meet and collaborate face-to-face with anyone from anywhere—improving teamwork, collaborative decision-making, and productivity with colleagues, customers, and business partners.

RealPresence Desktop offers features and user experiences similar to the Polycom RealPresence Mobile application. It is easily installed and configured, supports both standalone and managed modes, and enables sharing of the desktop and content. In standalone mode, the application requires a license to operate beyond the 30-day trial period.

In releases 2.0, 2.1, and 2.3, only the Windows platform is supported.

These release notes describe important information to assist you in installing and using the RealPresence Desktop application.

Software Version History

Version	Release Date	Features
2.3	March 2013	Added support for some Windows 8 editions **Note:** Windows Store is not supported. Added Keyboard Noise Elimination for Non-speakers.
2.1	December 2012	Added Interactive Voice Response (IVR) support for SVC calls
2.0	November 2012	Initial release

Hardware and Software Requirements

These hardware and software requirements were determined based on test scenarios. Your system's actual performance may vary based on software or hardware configurations.

Windows	Windows XP; 32-bit with Service Pack 3 or later
	Windows 7; 32-bit and 64-bit
	Windows 8 Standard, Pro, and Enterprise; 32-bit and 64-bit
Software	• Microsoft **.**Net Framework Version 4.0
	• Polycom CMA Management Application Version 6.2 or later
	• Polycom RealPresence Resource Manager Version 7.1 or later
Processor	Intel Core i5, 2.5GB or more
RAM	4 GB
Video memory	Minimum: 256 MB
Hard drive space	200 MB
Camera	Integrated or external
Audio devices	Standard PC97 audio devices
Monitor	Recommended: 16:9, 1920 x 1080
	Minimum: 1024x768

Installation

Installation of the RealPresence Desktop application requires that you have installed Microsoft **.**Net Framework version 4.0.

You can view your Microsoft **.**Net Framework version in %WINDIR%\Microsoft.NET\Framework.
For example, C:\Windows\Microsoft.NET\Framework.

The RealPresence Desktop installation file is provided in two different formats, .exe and .msi, that you can download from support.polycom.com.

Points to note about the .msi File:

• To avoid unexpected errors, please use the .msi version for centralized software distribution only. Centralized distribution is used by corporate system administrators for software installation or upgrade.

• When you save the .msi file to your local disk, please DO NOT rename it.

• If you are upgrading the RealPresence Desktop application from an older version, you must include this line to your command: REINSTALLMODE=vomus REINSTALL=ALL.

You should not include this line for the first–time installation.

Using the .exe file

The .exe file is intended for easy, interactive installations by end users who do not require extensive customization.

To install this product by using the .exe file:

1 Download the file.

2 Open the file.

3 Follow the instructions in the installation procedure.

Using the .msi file

The .msi file is intended for use by experienced Windows administrators to support "pushed" and "silent" installations. These procedures use mechanisms such as GroupPolicy Objects. You should already be familiar with these mechanisms to use the .msi installation file.

For example:

Build a desktop management or group policy object as follows:

- Writes the .msi installation file to a directory (for example, C:\temp) on the user's local system.

- Uses the Windows Installer (msiexec) to perform a command line installation of the program.

    — The following is an example of using the installer from the directory where the Polycom RealPresence Desktop "MSI" file resides:

    msiexec /qn /l* RPD_install.txt /i "RPDesktop.msi"

    — When running the installation from a directory other than the directory where the executable resides, include the full path in the command:

    msiexec /qn /l* RPD_install.txt /i "c:\temp\ RPDesktop.msi"

> The name of the.msi in your command line should be consistent with that from the installation package.

Feature Overview

The Polycom RealPresence Desktop offers the following key features compared to Polycom Telepresence m100 and Polycom CMA® Desktop systems:

- User interface designed similarly to that of the RealPresence Mobile application

- Support for the new SVC codec technology when used in conjunction with the Polycom Real Presence platform

- Enhanced Content Send capability

The following features offered by the CMA Desktop client are not available with this release of RealPresence Desktop:

- Support for the Apple Mac O/S

- Support for Presence display

- Support for IM and chat

- Detailed QoS reporting

New Features in Version 2.3

Version 2.3 added support for Windows 8 and Non-speaker Keyboard Noise Elimination.

If the non-speaker types on the keyboard or clicks on the mouse during a call, his microphone is automatically muted.

Features in Previous Versions

Version 2.1

Version 2.1 added Interactive Voice Response (IVR) support for SVC calls.

With the IVR service, you hear audio prompts when you dial in to a conference.

Version 2.0

Firewall/NAT Support

RealPresence Desktop provides firewall and NAT (Network Address Translator) traversal ability without the need to log in to a VPN. The following features are supported:

- Ability to keep Real-time Transport Protocol (RTP) NAT mapping alive during a live streaming.

- Support for guest user dialing.

- Ability to support Secure Real-time Transport Protocol (SRTP) and Transport Layer Security (TLS) for the secure transmission of media.

- Ability to support Binary Floor Control Protocol (BFCP) over both TCP and UDP links (UDP preferred). Control signaling can now be forwarded using the best-effort traffic class in firewall and NAT traversal.

- Support the following dial strings when you place calls without registering to any server.

H.323	SIP
• name@domain	• \<name>@\<domain>
• name@IP	• \<name>@\<ipAddress:port>
• extension@domain	• \<extension>@\<domain>
• extension@IP	• \<extension>@\<ipAddress:port>
• IP##extension	

- Ability to verify server certificates by using installed root certificates (SIP, HTTPS, and LDAP) when establishing TLS connections.

- Ability to interoperate with Acme Session Border Controller (SBC) systems.

- Support for SIP signaling FW/NAT traversal over TCP/TLS as defined in RFC5626.

- Ability to switch to a backup SIP server when the primary server fails.

Working with Content

Your RealPresence Desktop application enables you to view content sent by others in the call, and share your desktop or running applications with participants at the far end. The people video and the content you receive are displayed in separate windows.

Far-End Camera Control Support

In a point-to-point call, if the far-end system is configured to allow control, you can pan, tilt, and zoom the far-end PTZ camera.

Support for the Enterprise Scalable Video Coding Solution

The Enterprise Scalable Video Coding (SVC) solution is an alternative to the AVC mode that has traditionally been supported. Differences between the two modes are listed in the following table.

SVC Mode	AVC Mode
Each participant in the conference call is received by the client as a separate video stream.	The composite video image is determined by the bridge based on administrator configuration.
A Caller ID is indicated by text in the appropriate window, on display throughout the call.	Caller ID information is displayed intermittently.
Double-clicking or tapping on a participant's video, content video, or local preview expands that video to full screen. Double-clicking or tapping again reverts the display to the composite image.	Layout may be controlled by dialing **, and then selecting a format. Double-clicking or tapping on a participant's video, content video, or local preview expands that video to full screen. Double-clicking or tapping again reverts the display to the composite image.

The SVC solution provides the following features in this release:

- Video send and receive up to 720p resolution.
- Frame rates of 7.5/15/30.
- Support for AVC content.
- Support for SVC auto layouts for video streams of up to nine far-end participants.

  Last active speakers, resolution, bandwidth, and number of participants are adjusted based on network bandwidth and processor capabilities.
- Supported layouts of 1x1 and 1+1 through 1+9.

  The maximum layout of 1+9 comprises 9 remote participants plus 1 content sharing frame, and 1 local preview frame.
- Support for SAC with at least two quality layers, for example, 48 kbps and 10 kbps.
- Support the ability to mix up to three different audio streams from the MCU.
- Support the ability to mix up to nine different SVC video streams (call rate at 1920 kbps) from the MCUs.

Access to Media Statistics

To access media statistics, click the antenna icon .

Value	Description
Call Type	SIP or H.323 call type.
Call Encryption	Indicates whether your call is encrypted.
Far Site Name	Name of the far site.
Far Site System	Type of video conferencing system at the far end and its software version.
Call Speed	Negotiated speed (bandwidth) for the call, which is usually the combined video and audio speeds in the call.
Video Protocol	ITU-C video algorithm and annexes used in the current call. The video protocol used depends on the capabilities of the system at the far end as well as on your system's configuration.
Video Format	Picture size currently in use.
Audio Protocol	Audio algorithm and annexes used in the current call. The audio protocol used depends on the capabilities of the system at the far end as well as on your system's configuration.
Audio Rate	Bandwidth specified for the audio portion of the call. The proportion of the audio rate to the video rate depends on the protocol used.
Video Rate	Bandwidth specified for the video portion of the call. The proportion of the video rate to the audio rate depends on the protocol used.
Video Rate Used	Actual bandwidth being used for the video portion of the call. This is a real-time measurement, which normally fluctuates.
Video Frame Rate	Rate your system uses to update the picture seen at the far end. The system can send up to 15 frames per second. If the camera picks up large, continuous, or frequent motions, the software takes longer to assemble the data into video frames, and the frame rate drops. Changes in lighting also reduce the frame rate.
Video Packets Loss Percentage	Total video packet loss as a percentage of the total number of video packets transmitted by your system and those transmitted by the far end.
Video Jitter	Percentage of variation in the video transmission rate.

Value	Description
Audio Packet Lost	Number of audio data packets lost during the call, including transmitted packets and incoming packets. Packet loss indicates congestion or other problems on the network.
Audio Packets Loss Percentage	Total audio packet loss as a percentage of the total number of audio packets transmitted by your system and those transmitted by the far end.
Audio Jitter	Percentage of variation in the audio transmission rate.
Content Protocol	Format used for the recording, compression, and distribution of the content.
Content Format	Display resolution of the content.
Content Rate	Rate your system uses in content transmission.
Content Rate Used	Actual bandwidth being used for the content transmission.
Content Frame Rate	Rate your system uses in content frame transmission.
Content Packets Lost	Number of content data packets lost during the call, including transmitted packets and incoming packets. Packet loss indicates congestion or other problems on the network.
Content Packets Loss Percentage	Total audio packet loss as a percentage of the total number of content packets transmitted by your system and those transmitted by the far end.

Interoperability

Polycom CMA and RealPresence Resource Manager Systems

The RealPresence Desktop application can register to the Polycom CMA server (version 6.2 or higher) and Polycom RealPresence Resource Manager server (version 7.1 or higher). The CMA and RealPresence Resource Manager systems can schedule and perform limited monitoring of the RealPresence Desktop application, but cannot fully manage, provision, or update the application.

Products Tested in This Release

Polycom RealPresence Desktop systems are tested extensively with a wide range of products. The following list is not a complete inventory of compatible equipment. It simply indicates the products that have been tested for compatibility with this release.

> You are encouraged to upgrade all your Polycom systems with the latest software before contacting Polycom support to ensure that the issue has not already been addressed by vendor software updates. Go to http://support.polycom.com/PolycomService/support/us/support/service_policies.html to find the current Polycom Supported Products matrix.

Type	Product	Version
NAT/Firewall/Border Controller	ACME Packet Net-Net 3820	Firmware SCX6.3.0 F-2 GA
	Polycom VBP 5300-ST	11.2.13
	Polycom RealPresence Access Director	2.0.3
Gatekeeper, Gateways, External MCU, Bridges, Call Managers	Polycom Distributed Media Application™ (DMA™)	5.1.0, 5.2.0
	Polycom Converged Management Application™ (CMA)	6.2.2
	Polycom® RealPresence® Resource Manager	7.1
	Polycom RMX® 4000/2000	7.8
	Polycom RMX 1000 with Hardware Version C	2.4.2
	Polycom RSS™ 4000	8.0, 8.5
	Broadsoft SIP r17 Server	SP2
	DeltaPath	2.9.2

Type	Product	Version
Endpoints	Polycom HDX® systems	3.1.1
	Polycom RealPresence Mobile system	2.2, 2.3 (iOS) 2.2, 2.3 (Android)
	Polycom VVX systems	4.1.4
	Polycom Telepresence m100	1.0.5
	Polycom CMA Desktop	5.2.4
	Polycom RealPresence Desktop	2.1, 2.3
	Polycom RealPresence Group Series	4.0.1
Content Sharing Applications	Polycom People+Content™ IP	1.2.3 (PC only)

Supported Capabilities, Protocols, Algorithms, and Ports

Protocols

The following table lists the protocols supported in this version of the RealPresence Desktop application.

Protocol	Description
DNS	Domain Name System
H.235	Security and Encryption
H.239	Token Management
H.281	Far End Camera Control (FECC)
H.323	Signaling
H.460	Firewall/NAT Traversal
LDAP, H.350	Directory Services
NTLMv1, NTLMv2	Authentication
Polycom LPR™	Lost Packet Recovery
SIP	Session Initiation Protocol

Resolutions

The following table lists the resolutions supported in this version of the RealPresence Desktop application.

Call Speed	Video Format	Resolution
64 kbps - 511 kbps	180p	320x180
512 kbps - 1023 kbps	360p	640x360
1024 kbps - 1920 kbps	720p (HD)	1280x720

Algorithms

The following table lists the algorithms supported in this version of the RealPresence Desktop application.

Algorithm Type	Description
Audio	• G.711µ or G.711A • Siren LPR • G.722.1 at 24 kbps and 32 kbps • G.722.1 Annex C at 24 kbps, 32 kbps, and 48 kbps • G.719 at 32 kbps, 48 kbps, 64 kbps, and 128 kbps • SAC • Automatic gain control • Acoustic echo cancellation
Video	• H.261 • H.263/H.263+ • H.264 AVC • H.264 SVC • Content over H.263/H.263+/H.264 AVC • Video LPR
Encryption	AES supported in H.323 calls TLS/SRTP supported in SIP calls

Inbound and Outbound Ports

The following table lists the inbound and outbound ports supported in this version of the RealPresence Desktop application.

Inbound Ports

Port	Function
1720 (TCP)	H.323 Signaling
1719 (UDP)	Registration, Admission, and Status (RAS)
3230 - 3329 (TCP)	Call Signaling
3230 - 3237 (UDP)	Media (RTP/RTCP)
5060	SIP
3238 (UDP and TCP)	BFCP

Outbound Ports

Port	Function
443 (TCP)	Provisioning, Monitoring, Help Files, HTTPS
389 (TCP)	LDAP
5060	SIP
5061 (TCP)	SIP TLS signaling
1720 (TCP)	H.323 Signaling
1719 (UDP)	Registration, Admission, and Status (RAS)
3230 - 3329 (TCP)	Call Signaling
3230 - 3237 (UDP)	Media (RTP/RTCP)
3238 (UDP and TCP)	BFCP

Comparison: Polycom RealPresence Desktop, RealPresence Mobile, CMA Desktop, and Telepresence m100 Systems

The following table provides a detailed comparison of the features offered by the various soft client products from Polycom.

Features	RealPresence Desktop	RealPresence Mobile	CMA Desktop	Telepresence m100
IVR support for SVC calls	✓	✓		
Enterprise SVC solution	✓	✓		
Far-end camera control	✓	✓ (iPad professional mode only)	✓	✓
FW/NAT support	✓	✓	✓	✓
AVC H.323 calls (outgoing and incoming)	✓	✓	✓	✓
AVC SIP calls (outgoing and incoming)	✓	✓	✓	✓
H.239/BFCP Content receive	✓	✓	✓	✓
H.239/BFCP Content send	✓	✓ (PDF on Android tablet and iPad)	✓	✓
Automatic gain control	✓	✓	✓	✓
Acoustic echo cancellation	✓	✓	✓	✓
Call with audio-only devices	✓	✓	✓	✓
H.261	✓		✓	✓
H.263/H.263+ video	✓	✓ (Content only on iPad)	✓	✓
Video LPR	✓	✓ (only on iPad)	✓	✓
720p30 transmit	✓	✓ (only on Tegra 2-based Android tablets' rear camera)	✓	
720p30 receive	✓	✓ (only on Tegra 2-based Android tablets)	✓	✓
VGA transmit/receive	✓		✓	✓
Siren LPR	✓	✓	✓	✓
G.719 at 32 kbps, 48 kbps, 64 kbps, 128 kbps	✓		✓	✓
G.722.1 at 24 kbps and 32 kbps	✓		✓	✓

Features	RealPresence Desktop	RealPresence Mobile	CMA Desktop	Telepresence m100
G.722.1 Annex C at 24 kbps, 32 kbps, 48 kbps	✓	✓	✓	✓
Siren 14 at 24 kbps, 32 kbps, and 48 kbps			✓	✓
G.711µ or G.711A	✓	✓	✓	✓
Video mute	✓	✓	✓	✓
Audio mute	✓	✓	✓	✓
Volume control	✓	✓	✓	✓
DTMF–(inband tones)	✓	✓	✓	✓
DTMF–RFC 2833 (out of band events)	✓	✓	✓	✓
View call statistics	✓ (click ⦀)	✓ (touch ⦀)	✓ (select from menu)	✓ (select from menu)
Configuration/provisioning feedback/status	✓		✓	✓
Camera selection (in call)		✓	✓	✓
PIP/Local preview	✓ (local preview only)	✓ (local preview only)	✓	✓
H.323, and SIP	✓	✓	✓	✓
Dual monitor support	✓		✓	✓
Application level content share	✓			
Region content share			✓	✓
Windowed mode	✓		✓	✓
Full Screen mode	✓	✓	✓	✓
Minimized running mode	✓	✓ (Android only)	✓	✓
RealPresence Resource Manager monitoring and reporting	✓	✓	✓	
RealPresence Resource Manager provisioning	✓	✓	✓	
Software update		✓ (only through App Store and Google Play)	✓	

Features	RealPresence Desktop	RealPresence Mobile	CMA Desktop	Telepresence m100
Free mode	✓	✓		✓
Recent Call list (call history)	✓	✓	✓	✓
Local contact list	✓	✓	✓	✓
Directory service	✓ (LDAP)	✓ (LDAP)	✓ (LDAP)	✓ (LDAP, GAB)
XMPP Presence			✓	
Instant Messages			✓	
Localization	✓	✓ (iOS only)	✓	✓
Alerts/Notification log	✓		✓	
Log retrieval tool	✓		✓	✓
AES encryption	✓	✓	✓	✓ (H.323 only)
H.460 firewall traversal	✓	✓	✓	✓
Acme SBC Interoperability	✓	✓	✓	✓
SIP outbound (RFC 5626)	✓	✓		
Certificates for TLS connection	✓	✓	✓	✓
BFCP over UDP	✓	✓		
BFCP over TCP	✓	✓	✓	✓
Secure RTP/RTCP (SDES)	✓	✓		
Symmetric RTP	✓	✓	✓	✓
Configurable fixed ports for RTP/RTCP			✓	✓
Network adapter selection–Automatic	✓	✓	✓	✓
Annex O	✓	✓	✓	

About AES Encryption

Following are requirements for using AES encryption in calls.

AES Encryption in H.323 Calls

To use AES encryption in H.232 calls, both you and your far end must satisfy the following requirements:

1 Enable AES encryption

When working in the managed mode, the AES encryption of the RealPresence Desktop application is configurable through its provisioning server.

When working in the managed mode, the AES encryption of the RealPresence Desktop application works as "When available" and is not guaranteed.

2 Both you and your far end must support, or be compatible with the same Key exchange and encryption method (H.235v3 w, or AES 128bit CBC).

AES Encryption in SIP Calls

To use AES encryption in SIP calls, both you and your far end must satisfy the following requirements first:

1 Enable AES encryption

When working in the managed mode, the AES encryption of the RealPresence Desktop application is configurable throught its provisioning server.

When working in the managed mode, the AES encryption of the RealPresence Desktop application works as "When available" and is not guaranteed.

2 Enable TLS for SIP transport

3 Support, or be compatible with the same Key exchange (SDES over TLS) and encryption method (AES 128bit CBC mode over SRTP).

Corrected Issues in Version 2.1

Category	Issue ID	Description
Audio/Video	SWEP-2757	No media are shown or heard in the HDX system when the RealPresence Desktop application calls H.323 B2B through a SIP trunk to the H.323 HDX system in the other enterprise.
LDAP	SWEP-2740	When you have not taken an LDAP action for a prolonged period. accessing LDAP can result in the message "Not connected to LDAP server."
User Interface	SWEP-2741	On some systems, the RealPresence Desktop application cannot see Internet Explorer 8 when a user shares Monitor 1 with another RealPresence Desktop user.

Known Issues

The following table lists the known issues for this release. If a workaround is available, it is noted in the table.

Category	Issue ID	Description	Workaround
Audio	SWEP-3461	Audio quality can be improved by removing Conexant smart audio processing.	Remove smart audio processing as follows: 1 Go to **Control Panel > Add/Remove Programs**. 2 Uninstall **Conexant Smart Audio**. 3 Reboot the computer.
Camera	SWEP-2630	When the specified camera is in use by another application, the RealPresence Desktop application is unable to automatically select an idle camera if one is available.	
Camera	SWEP-2782	On a 64-bit Windows 7 operating system, selecting **Polycom CX5000 Panoramic Video** as video device displays a blue screen.	

Category	Issue ID	Description	Workaround
Contacts	SWEP-2631	You cannot modify the following contact information: • Last Name • First Name • Device Name • Device Type	
Content	SWEP-2735	Sharing content from a third or fourth monitor may cause the RealPresence Desktop application to stop operating correctly.	
Content	SWEP-3427	When you select to send application content, the content will be paused if it is overlapped with another application.	Close the other application, or make the content not overlapped.
General	SWEP-2742	The Qihoo 360 SafeGuard antivirus program reports a false virus alert for the RealPresence Desktop application.	
General	SWEP-3215	The RealPresence Desktop application cannot run while either the Polycom CMA® Desktop or Polycom Telepresence m100 application is running.	Close the CMA Desktop or Telepresence m100 application.
Interoperability: Lenovo Thinkpad	SWEP-2720	Sometimes the integrated or USB camera does not send video.	
SVC	SWEP-2736	In a poor network connection, sometimes a participant disconnects automatically from an SVC call. This can result in a participant showing up in two video streams–one frozen and one active. The RMX system will clear the frozen stream in 30 minutes.	
SVC	SWEP-2634	Note these limitations for SVC conference calls. • The following are not supported: – Encryption – FECC – RSS • Only SIP calls are supported. • A maximum of nine far-end video streams and one content video is supported. • Use SIP TCP for SVC conferences.	
SVC	SWEP-2372	When there is 10% or more packet loss and UDP is used for an SVC call, the screen layout is wrong.	

Category	Issue ID	Description	Workaround
SVC	SWEP-2872	After you join an SVC conference by dialling a DMA virtual entry queue, you receive no participant video.	Polycom DMA systems do not support SVC entry queues. Join SVC conferences directly if the call is hosted through a Polycom DMA system.
SVC	SWEP-2871	If you are the first one to dial in to a password-protected SVC conference, you hear noise for a short while after the IVR prompt.	
SVC	SWEP-2870	Within the call rate range 128 - 256 kbps, the IVR video quality of SVC conferences is much lower than that of AVC calls at the same call rate.	
User Interface	SWEP-2739	Turning on the screen capture function of some desktop dictionary applications can cause the RealPresence Desktop interface to hang.	
User Interface	SWEP-2783	The display is truncated if the screen resolution is 1024 x 600. Functionality is not affected.	
User Interaction	SWEP-2784	The keyboard Page Up, Page Down, and arrow keys do not work with the Recent Calls, Call Details, and Contacts tab pages.	
Video	SWEP-2781	If you start the RealPresence Desktop application within 10 seconds after it has ended, sometimes the interface does not display correctly because the TCP socket was not released.	
Video	SWEP-3425	In a call with an RMX system that uses an MPM+ media card, a blue edge is displayed at the bottom of the video window.	Use an MPMX media card with the RMX system.

Preparing Your Device for Mutual Transport Layer Security

You can establish secure communications using Mutual Transport Layer Security (MTLS) with provisioning servers such as Polycom DMA, CMA, or RealPresence Resource Manager systems.

To establish MTLS connections, the client and server need to hold certificates issued from the same Certificate Authority (CA) and the root certificate of this CA.

> To import certificates, you need to generate a Certificate Request (CSR) first by using a computer that has installed the openSSL tool.

The following instructions use PC as the example.

To generate and import your certificate:
Make sure you have OpenSSL installed and well configured.

Open the CMD console window from your PC.

1 Generate the private key *client.key*. For example:

C:\OpenSSL-Win32\bin> openssl genrsa -out client.key 1024

2 Generate the certificate request *client.csr*. For example:

C:\OpenSSL-Win32\bin> openssl req -new -key client.key -out client.csr

You are about to be asked to enter information that will be incorporated into your certificate request.

What you are about to enter is what is called a Distinguished Name or a DN.

There are quite a few fields but you can leave some blank

For som-----
Country Name (2 letter code) [GB]:cn ---CSR info.
State or Province Name (full name) [Berkshire]:bj ---CSR info.
Locality Name (eg, city) [Newbury]:bj ---CSR info.
Organization Name (eg, company) [My Company Ltd]:plcm ---CSR info.
Organizational Unit Name (eg, section) []:caqa ---CSR info.
Common Name (eg, your name or your server's hostname) []:caqa ---CSR info.
Email Address []:pp@pp.com ---CSR info.

Enter the following 'extra' attributes to be sent with your certificate request
A challenge password []:1234 -----see [Note1]
An optional company name []:poly

> Write down the challenge password. You will need it later in the procedure.

3 Submit the certificate request to your CA:

a View the content of the file *client.csr* using the following command, then select and copy its content (from ---BEGIN CERTIFICATE REQUEST to END CERTIFICATE REQUEST---):

C:\OpenSSL-Win32\bin> type client.csr

b Go to your CA's web interface http://<CA's IP address>/certsrv/, then click **Request a certificate**.

c Click **advanced certificate request**.

d Click **Submit a certificate request by using a base-64-encoded CMC or PKCS #10 file, or submit a renewal request by using a base-64-encoded PKCS #7 file**.

e Paste the content of the file *client.csr* to the text filed under **Saved Request** text field, then click **Submit**.

f Click **Base 64 encoded** and then click **Download certificate**.

The file is saved as certnew.cer by default in the folder **Downloads**.

4 Move the generated *certnew.cer* file to your current directory.

5 Convert the file *ccertnew.cer* to a .p12 file by using the openSSL tool. For example:

C:\OpenSSL-Win32\bin> openssl pkcs12 -export -in certnew.cer -inkey client.key -out client.p12 -name testp12
Enter Export Password:

Verifying - Enter Export Password:

> The export password should be the same as the challenge password you set in step 2.

6 Encrypt the challenge password you set in Step 2:

a Go to http://www.convertstring.com/EncodeDecode/Base64Encode.

b Enter the challenge password in the text field, and then click **Base64 Encode!**.

c Copy the encoded text from the following text field, and save it as a .pwd file, for example, *client.pwd*.

7 Open the RPD appdata folder **%appdata%\RealPresence Desktop**, and then copy the files *client.p12* and *client.pwd* to the folder.

To import the root certificate of your CA:

1 Go to your CA's web address http://<CA's IP address>/certsrv/, click **Download a CA certificate, certificate chain, or CRL**.

2 Select **Base 64**, and then click **Download CA Certificate.**

3 Right-click the CA file, and select **Install Certificate**. Follow the Certificate Import Wizard.

Be sure to install it to **Trusted Root Certificate Authorities**.
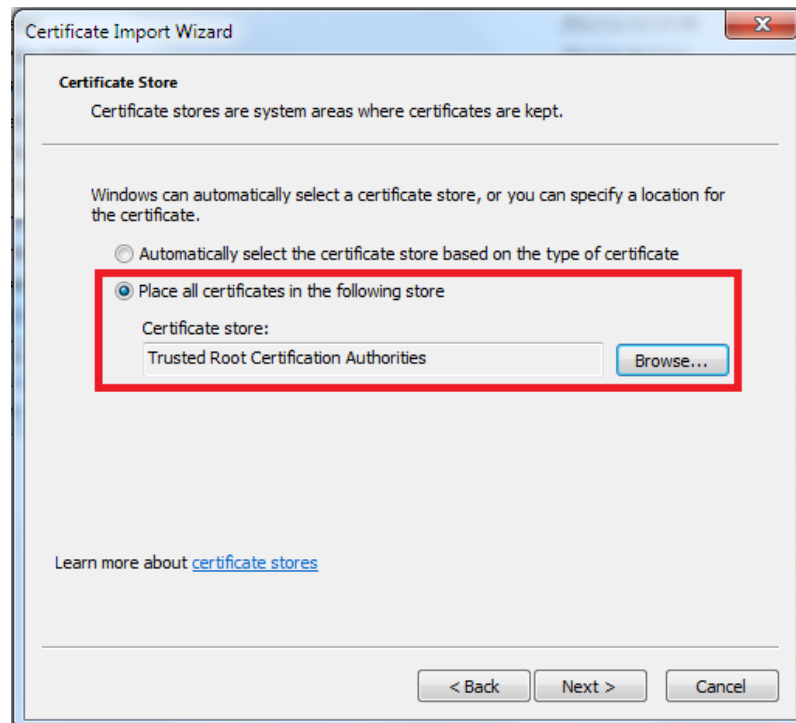
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